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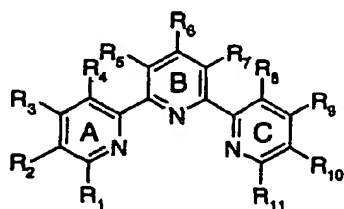
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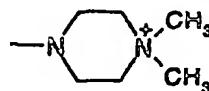
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(54) Title: USE OF METAL COMPLEX COMPOUNDS AS OXIDATION CATALYSTS



(2)



(3)

(57) Abstract: Use of metal complex compounds of formula (1)  $[L_n M_{m'} X_p]^z Y_q$  wherein Me is manganese, titanium, iron, cobalt, nickel or copper, X is a coordinating or bridging radical, n and m are each independently of the other an integer having a value of from 1 to 8, p is an integer having a value of from 0 to 32, z is the charge of the metal complex, Y is a counter-ion, q = z/(charge Y), and L is a ligand of formula (2) wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> are each independently of the others hydrogen; unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; cyano; halogen; nitro; -COOR<sub>12</sub> or -SO<sub>2</sub>R<sub>12</sub> wherein R<sub>12</sub> is in each case hydrogen, a cation or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; -SR<sub>13</sub>, -SO<sub>2</sub>R<sub>13</sub> or -OR<sub>13</sub> wherein R<sub>13</sub> is in each case hydrogen or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl; -NR<sub>14</sub>R<sub>15</sub>; -(C<sub>1</sub>-C<sub>6</sub>alkylene)-NR<sub>14</sub>R<sub>15</sub>; -N<sup>o</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub>; -(C<sub>1</sub>-C<sub>6</sub>alkylene)-N<sup>o</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub>; -N(R<sub>13</sub>)-(C<sub>1</sub>-C<sub>6</sub>alkylene)-NR<sub>14</sub>R<sub>15</sub>; -N[(C<sub>1</sub>-C<sub>6</sub>alkylene)-NR<sub>14</sub>R<sub>15</sub>]<sub>2</sub>; -N(R<sub>13</sub>)-(C<sub>1</sub>-C<sub>6</sub>alkylene)-N<sup>o</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub>; -N[(C<sub>1</sub>-C<sub>6</sub>alkylene)-N<sup>o</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub>]<sub>2</sub>; -N(R<sub>13</sub>)-N-R<sub>14</sub>R<sub>15</sub> or -N(R<sub>13</sub>)-N<sup>o</sup>R<sub>14</sub>R<sub>15</sub>R<sub>16</sub>, wherein R<sub>13</sub> is as defined above and R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> are each independently of the other(s) hydrogen or unsubstituted or substituted C<sub>1</sub>-C<sub>18</sub>alkyl or aryl, or R<sub>14</sub> and R<sub>15</sub> together with the nitrogen atom bonding them form an unsubstituted or substituted 5-, 6- or 7-membered ring which may optionally contain further heteroatoms; with the proviso that (i) at least one of the substituents R<sub>1</sub>-R<sub>11</sub> contains a quaternized atom which is not directly bonded to one of the three pyridine A, B or C and that (ii) Y is neither I<sup>-</sup> nor Cl<sup>-</sup> in the case that Me is Mn(II), R<sub>1</sub>-R<sub>5</sub> and R<sub>7</sub>-R<sub>11</sub> are hydrogen and R<sub>6</sub> is formula (III) as catalysts for oxidation reactions, and the novel metal complex compounds of formula (1), the novel ligands of formula (2) and their starting materials.